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DERWENT-WEEK: 199011  
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TITLE: Landing mat with removable section - has recess on  
upper surface  
without core layer, fillable by section for conventional mat  
or removable for  
goal area

INVENTOR: SUNDOVIST, L E

PATENT-ASSIGNEE: SUNDQVIST L E[SUNDI]

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PATENT-FAMILY:

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| SE 461766 B  |          | March 26, 1990    | N/A      |
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APPLICATION-DATA:

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INT-CL (IPC): A63B005/18; A63B006/00

ABSTRACTED-PUB-NO: WO 9001355A

BASIC-ABSTRACT: A multi-purpose mat for sporting use

comprises a central reinforcing core layer (2) of tough non-penetrable elastic material, two layers (1, 3) of sort shock absorbing resilient material e.g. foam rubber disposed on either face of the central layer and an outer protective covering (4, 4a) which adds strength to the mat.

Over part of the upper surface there is a recess (5) in which the core layer is absent. This may be filled by a closely fitting removable section (6) which comprises a layer (7) similar to the core layer a lower protective layer (13a) and upper protective layer (8). The removable section is fitted to fill the recess (5) giving conventional landing mat, or removed and the mat positioned vertically to form a goal area.

ADVANTAGE - Landing mat may be used as goal area instead of non useful storting.

CHOSEN-DRAWING: Dwg.2/4

TITLE-TERMS:

LANDING MAT REMOVE SECTION RECESS UPPER SURFACE CORE LAYER  
FILL SECTION  
CONVENTION MAT REMOVE GOAL AREA

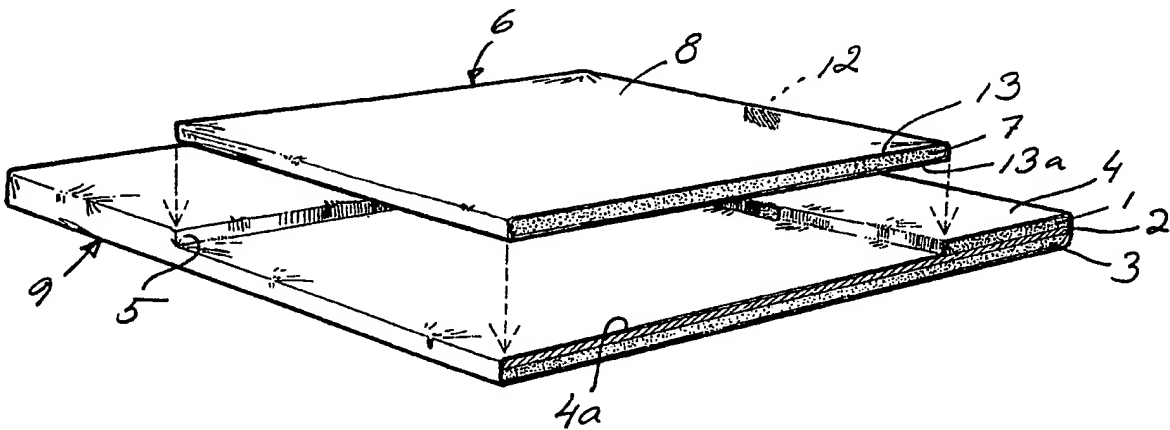
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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <b>(51) International Patent Classification 4 :</b><br><br><b>A63B 5/18</b>  | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 90/01355</b><br><br><b>(43) International Publication Date:</b> 22 February 1990 (22.02.90)  |
| <b>(21) International Application Number:</b> PCT/SE89/00425<br><b>(22) International Filing Date:</b> 2 August 1989 (02.08.89)<br><br><b>(30) Priority data:</b><br>8802799-0                      3 August 1988 (03.08.88)                      SE<br><br><b>(71)(72) Applicant and Inventor:</b> SUNDOVIST, Leif, Erik [SE/SE]; PI 8570, S-430 41 Kullavik (SE).<br><br><b>(74) Agent:</b> AWAPATENT AB; Box 53252, S-400 71 Göteborg (SE).<br><br><b>(81) Designated States:</b> AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), |           | MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US.<br><br><b>Published</b><br><i>With international search report.</i><br><i>In English translation (filed in Swedish).</i> |
| <b>(54) Title:</b> MULTIPURPOSE MAT FOR SPORTING<br><br><div style="text-align: center;">  </div>  |           |  |
| <b>(57) Abstract</b><br><br><p>The object of the invention is to provide a multipurpose mat for sporting which can be used also for other exercises than the conventional mats, serving for example as landing beds for jumping. The mat according to the invention has in one flat side a recess (5) which extends through but a part of the thickness of the mat, the shape of said protective cover (4) of the mat conforming to the shape of the recess, and a filling piece (6) which corresponds to the shape of the recess, whereby the mat, in lay-flat condition and with its filling piece in position, can serve as a conventional landing bed, and, after removal of said filling piece and in upright condition can serve as a shock-absorbing goal marker for various types of ball games and the like.</p>                        |           |  |

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MULTIPURPOSE MAT FOR SPORTING

The present invention relates to a multipurpose mat for sporting, preferably of the type that is used as a landing bed for jumping.

When not in use, such landing mats are mostly  
5 kept standing on edge along one of the walls of the gymnasium, or they are in some way suspended. When standing or suspended, the mats are generally not used to any greater extent, which means that they are not put to use during most of the time that the  
10 gymnasium is open.

One of the objects of the present invention is to extend the field of application for such mats, so that the investment made when the mat is bought pays off as much as possible, at the same time as the  
15 purchase of some supplementary apparatus can be avoided.

The mat according to the invention is, in the main, characterised in that the mat which in per se known manner comprises a soft, shock-absorbing core surrounded by a flexible protective cover, is formed in one flat  
20 side with a recess which extends through but a part of the thickness of the mat and to the shape of which said protective cover conforms, and has a filling piece which corresponds to the shape of the recess and is preferably made of the same core material as the  
25 remainder of the mat, said filling piece having likewise a flexible protective cover, whereby the mat, in lay-flat condition and with its filling piece in position and preferably facing the floor, can serve as a conventional landing bed, and, after removal of said filling piece  
30 and in upright condition, can serve as a shock-absorbing goal marker for various types of ball games and the like.

The mat according to the invention may thus serve not only as a conventional landing bed, but for instance also as an efficient goal marker, which means that no

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special goal appliances need be acquired.  
Here follows a description of an embodiment of  
the device according to the invention, reference being  
had to the accompanying drawings in which:

5 Fig. 1 is a perspective view showing the mat  
according to the invention from one of its sides,  
Fig. 2 is a sectional view of the same mat from  
which the filling piece has been lifted up,

10 Fig. 3 is a perspective view of the same mat  
lying on the floor by a vaulting horse, and  
Fig. 4 is a view of the mat from which the filling  
piece has been removed and which is standing on edge  
to serve as, for instance, a goal marker.

15 As is best seen from Fig. 2, the mat according  
to the invention comprises a core 1-3 of a relatively  
soft, shock-absorbing material, such as foam rubber.  
The core is provided with a flexible and durable pro-  
20 tective cover 4. One side of the core 1-3 is formed  
having the same shape as the recess and comprising,  
like the remainder of the mat, a core 7 of similar  
material as the rest of the mat and likewise provided  
25 with a flexible and durable protective cover 8 similar  
to the protective cover 4 on the rest of the mat which  
in its entirety is designated by reference numeral 9.  
The protective cover 4 has been pulled down into the  
recess 5 to closely follow the walls of said recess,  
30 as can be seen in the drawings. In this manner, the  
recess 5 is clearly visible in the main part 9 of  
the mat. In the embodiment illustrated, the recess  
5 is open at one longitudinal side edge 10 of the mat,  
and velcro fasteners 11 are provided on the side edge  
35 of the recess furthest away from the side edge 10 of  
the mat, corresponding velcro fasteners 12 cooperating  
with the velcro fasteners 11 being provided on the  
corresponding edge of the filling piece 6. The core  
layer of prior art mats frequently comprises two soft

elastic layers 1, 3 disposed each on one side of a tough reinforcing layer 2 which is stronger than the two layers 1 and 3. The reinforcing layer 2 mainly serves to prevent penetration. In the embodiment shown, where the core comprises said three layers, the recess 5 extends down to the reinforcing layer 2. When the mat is used as a landing bed, as is shown in Fig. 3, the reinforcing layer of this embodiment is thus supplemented with the inner part 13a of the protective cover 13 of the filling piece 6, and with the part 4a of protective cover 4 on the main part 9 of the mat that is situated inside the recess 5. Thus, it is possible to further strengthen the reinforcing layer. When the filling piece 6 is relatively large and thus extends across the whole landing area, the ordinary reinforcing layer 2 may in some cases be left out, since the protective cover per se serves as a reinforcement. When a mat provided with a filling piece is used as a landing bed, the filling piece should be facing downwards, in order to avoid that someone lands in the gap area between the filling piece 6 and the main part 9 of the mat. Since the boundary between the filling piece 6 and the remainder of the mat will be situated inside the mat, and because of its penetration-preventing function, the core part of the rest of the mat can be produced in a less costly way than is otherwise the case. This natural reinforcement is obtained because the recess 5 into which the filling piece 6 fits, extends through but a part of the thickness of the mat. Naturally, it is possible to arrange other fastenings than the velcro fasteners 11, 12, and the fastenings can be disposed elsewhere in the surface layer between the main part 9 of the mat and the filling piece 6, than is shown in the drawings.

When the mat is placed in upright condition, as shown in Fig. 4, and the filling piece has been removed, the recess in the mat can serve as an efficient

goal marker for ball games and the like. Thus, the mat serves as an efficient shock-absorber, a great advantage at ball games because incoming balls stay within the goal area and do not bounce back into the field. In the embodiment shown, where the recess is open at one of the side edges of the mat, it is suitable to use the mat as a goal marker for such ball games as for instance handball, but using the mat for other ball games is, of course, within the scope of the invention. Furthermore, the recess may be located elsewhere in the mat, or have another shape.

The present invention is not limited to the above-mentioned embodiment shown in the drawings and chosen by way of example, but can be varied in its details within the scope of the appended claims without departing from the spirit of the invention.



## CLAIMS

1. Multipurpose mat for sporting, suitably of the type that is used as a landing bed for jumping, c h a r a c t e r i s e d in that the mat which in per se known manner comprises a soft shock-absorb-  
5 ing core (1-3) surrounded by a flexible protective cover (4), is formed in one flat side with a recess (5) which extends through but a part of the thickness of the mat and to the shape of which said protective cover (4) conforms, and has a filling piece (6) which  
10 corresponds to the shape of the recess and is preferably made of the same core material as the remainder of the mat, said filling piece having likewise a flexible protective cover (13), whereby the mat, in lay-flat condition and with its filling piece (6) in position  
15 and preferably facing the floor, can serve as a conventional landing bed, and, after removal of said filling piece and in upright condition, can serve as a shock-absorbing goal marker for various types of ball games and the like.

20 2. Multipurpose mat as claimed in claim 1, the core of which is divided by a reinforcing layer (2) extending along the plane thereof, c h a r a c t e r - i s e d in that the recess (5) is located on one side only of the reinforcing layer.

25 3. Multipurpose mat as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the recess (5) is open at one side edge (10) of the mat.

4. Multipurpose mat as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that  
30 the filling piece (6) and the recess (5) on their opposing surfaces have mutually cooperating fastening members (11, 12), such as velcro fasteners.

5. Multipurpose mat as claimed in claim 4, c h a r a c t e r i s e d in that the fastening members

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are disposed at the edge of the recess (5) which is situated furthest away from the edge (10) of the mat where the recess is open.

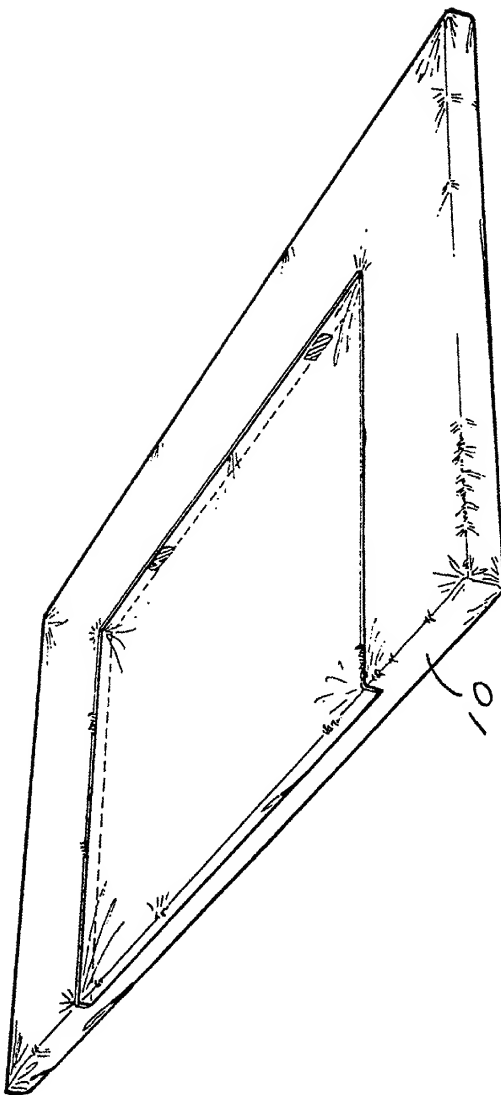
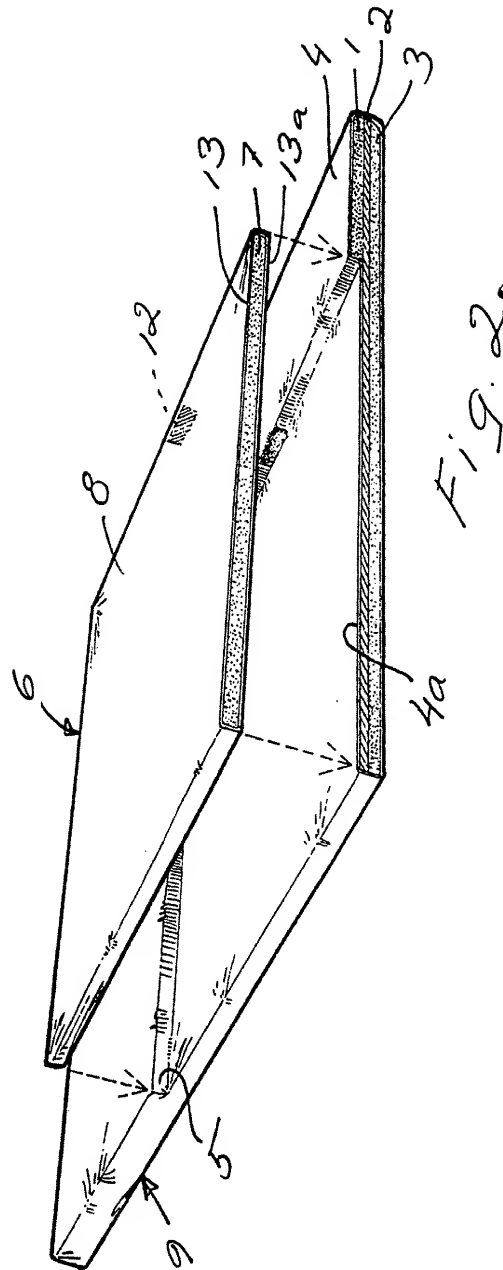


Fig. 1



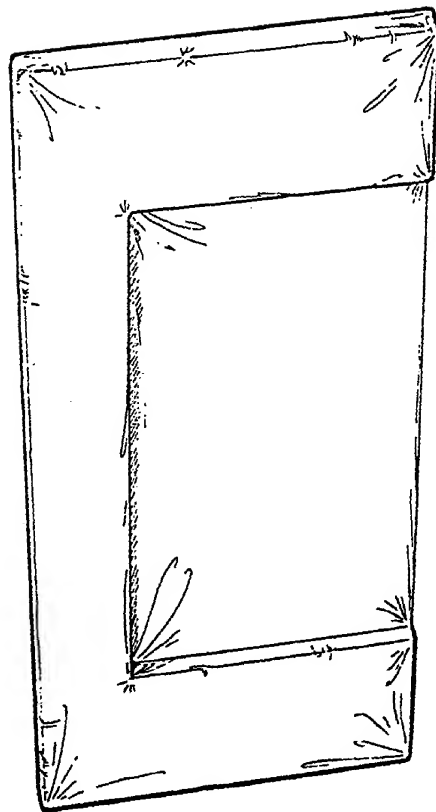


Fig. 4

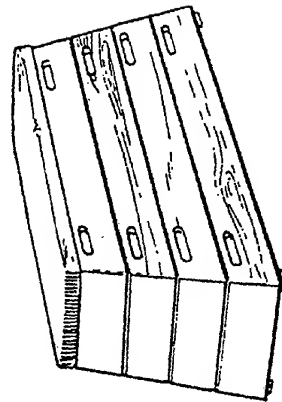
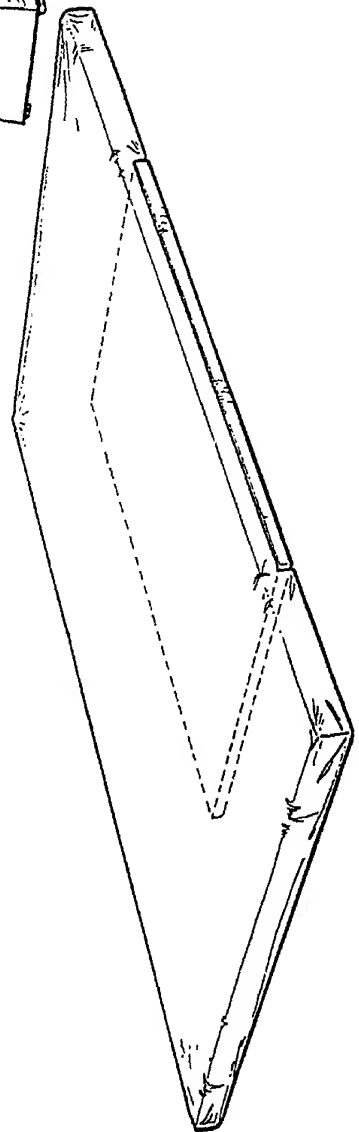
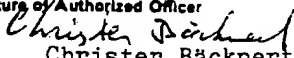


Fig. 3



# INTERNATIONAL SEARCH REPORT

International Application No PCT/SE89/00425

|   |   |                          |
|---|---|--------------------------|
| <b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) *  |   |                          |
| According to International Patent Classification (IPC) or to both National Classification and IPC 4   |   |                          |
| A 63 B 5/18   |   |                          |
| <b>II. FIELDS SEARCHED</b>  |   |                          |
| Minimum Documentation Searched 7  |   |                          |
| Classification System   | Classification Symbols  |                          |
| IPC 4   | A 63 B 5/00, /16, /18, 63/00  |                          |
| US C1   | 272: 93, 101, 109; 5: 345   |                          |
| Documentation Searched other than Minimum Documentation<br>to the Extent that such Documents are Included in the Fields Searched 8  |   |                          |
| SE, NO, DK, FI classes as above   |   |                          |
| <b>III. DOCUMENTS CONSIDERED TO BE RELEVANT 9</b>   |   |                          |
| Category *  | Citation of Document, 11 with indication, where appropriate, of the relevant passages 12                  | Relevant to Claim No. 13 |
| A   | SE, B, 393 928 (HARGEST, T.S)<br>31 May 1977  |                          |
| A   | US, A, 2 207 095 (HUTCHINSON, F.M)<br>9 July 1940   |                          |
| A   | US, A, 2 462 579 (WARNER, L.W)<br>22 February 1949  |                          |
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